

STIC Search Report

EIC 1700

STIC Database Tracking Number: 137097

**TO: Janis Dote
Location: Rem 9C75
Art Unit : 1756
November 10, 2004**

Case Serial Number: 10/667410

**From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov**

Search Notes

Access DB# 137097**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: JANIS DOTE Examiner #: 68274 Date: 11/4/04
Art Unit: 1756 Phone Number 30571-272-1382 Serial Number: 10/667,410
Mail Box and Bldg/Room Location: REN 9C75 Results Format Preferred (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Electrophoretic photoconductor method, apparatus
apparatus process cartridge and automatic surface layer coating
Inventors (please provide full names): _____

TAKAAKI IEGAMI, TOMOYUKI SHIMADA, YASUO SUZUKI, NOZOMU TAMOTO,
HIDETOSHI KAMI
Earliest Priority Filing Date: 9/24/02

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Search coating solution in claims 19 and 20,
especially search compounds of general
formula 1 and 2. See attached claims

RECEIVED STN 1756
NOV 10 2004

REV 1

PAT. & T.M. OFFICE

STAFF USE ONLY

| | Type of Search | Vendors and cost where applicable |
|--|------------------------|-----------------------------------|
| Searcher: <u>K. Fuller</u> | NA Sequence (#) _____ | STN <u>✓</u> |
| Searcher Phone #: _____ | AA Sequence (#) _____ | Dialog _____ |
| Searcher Location: _____ | Structure (#) <u>1</u> | Questel/Orbit _____ |
| Date Searcher Picked Up: _____ | Bibliographic _____ | Dr.Link _____ |
| Date Completed: <u>11/10/04</u> | Litigation _____ | Lexis/Nexis _____ |
| Searcher Prep & Review Time: <u>30</u> | Fulltext _____ | Sequence Systems _____ |
| Clerical Prep Time: _____ | Patent Family _____ | WWW/Internet _____ |
| Online Time: <u>30</u> | Other _____ | Other (specify) _____ |

=> file reg

FILE 'REGISTRY' ENTERED AT 14:37:42 ON 10 NOV 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 8 NOV 2004 HIGHEST RN 777024-10-9
DICTIONARY FILE UPDATES: 8 NOV 2004 HIGHEST RN 777024-10-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 14:37:46 ON 10 NOV 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN. Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 10 Nov 2004 VOL 141 ISS 20
FILE LAST UPDATED: 9 Nov 2004 (20041109/ED)

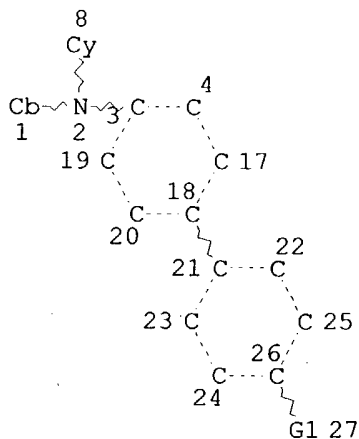
This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d que

L12 STR

O ~ Ak ~ N
@9 10 11

Ak \sim N
@12 13

$$\begin{array}{ccccc} S & \neg & A & k & \neg & N \\ @14 & 15 & & 16 & & \end{array}$$


VAR G1=9/12/14

NODE ATTRIBUTES:

NSPEC IS RC AT 11

NSPEC IS RC AT 13

| | | | | |
|-------|----|----|----|----|
| NSPEC | IS | RC | AT | 16 |
|-------|----|----|----|----|

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 1

GGCAT IS UNS AT 8

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L14 30 SEA FILE=REGISTRY SSS FUL L12

L16 16 SEA FILE=HCAPLUS ABB=ON L14

L17 1 SEA FILE=HCAPLUS ABB=ON L16(L) COATING?

L19 14 SEA FILE=HCAPLUS ABB=ON L16 AND ELECTROPHOTOG?

L20 14 SEA FILE=HCAPLUS ABB=ON L17 OR L19

L21 6 SEA FILE=HCAPLUS ABB=ON L16 AND COATING?

L22 14 SEA FILE=HCAPLUS ABB=ON L20 OR L21

14 CA references with utility

```
=> d 1.22 1-14 bib abs ind hitstr
```

L22 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:842679 HCAPLUS

TI Image-forming apparatus containing triarylmethane compound photoreceptor surface layer

IN Suzuki, Yasuo; Tamoto, Nozomu; Kami, Hidetoshi; Ikegami, Takaaki; Shimada, Tomoyuki; Yasutomi, Hiroshi

PA Ricoh Co., Ltd., Japan

50 Jpn. Kokai Tokkyo Koho, 67 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.

KIND

DATE _____

APPLICATION NO.

DATE _____

PI JP 2004287371 A2 20041014 JP 2003-143923 20030521
 PRAI JP 2003-19366 A 20030128

AB Disclosed is the image-forming apparatus comprising a photoreceptor, a charging device, and a scanning device for forming an electrostatic latent image in the photoreceptor, wherein (a) the scanning device uses a laser beam having the beam diameter $\leq 35 \mu\text{m}$, (b) the photoreceptor has on an elec. conductive support a charge-generating layer, a charge-transporting layer, and a surface layer containing a triarylmethane compound having alkylamino, and (c) a sum of the film thicknesses of the charge-transporting layer and the surface layer on the support is $\leq 20 \mu\text{m}$. Further, the surface layer contains a carboxylic acid compound

IC ICM G03G005-147

ICS G03G005-04; G03G015-04; G03G015-043

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** app photoreceptor surface layer triarylmethane compd

IT **Electrophotographic** apparatus

Electrophotographic photoconductors (photoreceptors)

(**electrophotog.** photoreceptors containing triarylmethane compound in surface layer)

IT 114037-67-1 501367-64-2 501367-65-3 501367-77-7 **676448-98-9**
 770730-00-2 770730-08-0 775347-48-3 775347-49-4 775347-50-7
 775347-51-8 775347-52-9 775347-53-0 775347-54-1 **775347-55-2**
 775347-56-3 775347-57-4 775347-58-5 775347-59-6 775347-60-9

RL: DEV (Device component use); USES (Uses)

(**electrophotog.** photoreceptors containing triarylmethane compound in surface layer)

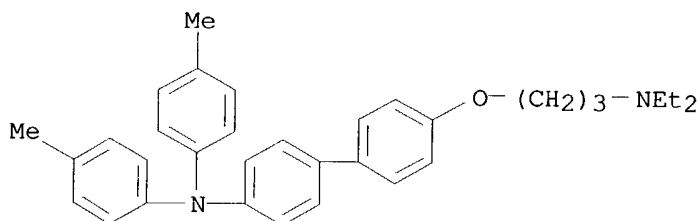
IT **676448-98-9 775347-55-2**

RL: DEV (Device component use); USES (Uses)

(**electrophotog.** photoreceptors containing triarylmethane compound in surface layer)

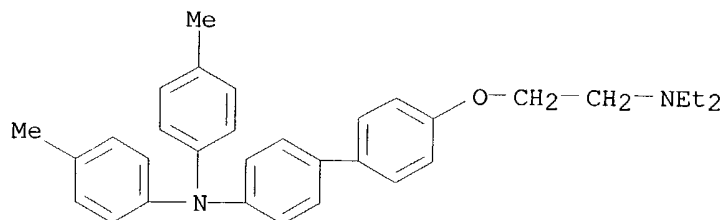
RN 676448-98-9 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[3-(diethylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



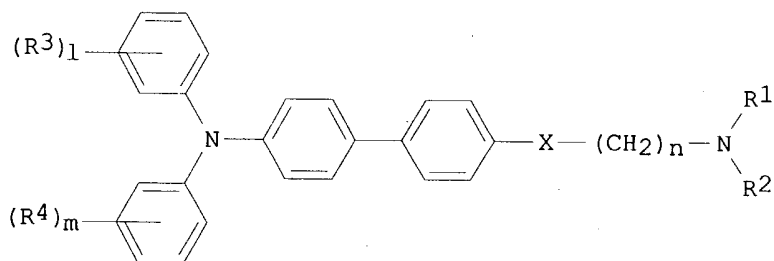
RN 775347-55-2 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[2-(diethylamino)ethoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



L22 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:271543 HCAPLUS
 DN 140:294740
 TI Aminobiphenyls for **electrophotographic** photoconductors
 IN Shimada, Tomoyuki; Ikegami, Takaaki; Suzuki, Yasuo; Tamoto, Nozomu; Kami, Hidetoshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2004099561 | A2 | 20040402 | JP 2002-265967 | 20020911 |
| PRAI | JP 2002-265967 | | 20020911 | | |
| OS | MARPAT 140:294740 | | | | |
| GI | | | | | |



I

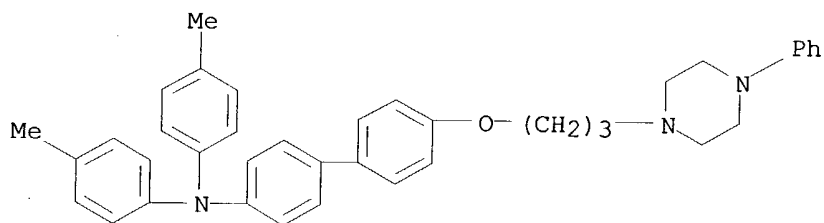
AB The aminobiphenyls are I (R1, R2 = alkyl, aromatic hydrocarbyl; R1 and R2 may form N-containing heterocyclic ring; R3, R4 = C1-4 alkyl, alkoxy, halo; X = direct bond, O, S; l, m = 0-3; n = 2-4). **Electrophotog.** photoconductors containing I as charge-transporting agents produce high-resolution images and good durability.

IC ICM C07C211-54
 ICS C07C217-80; C07C323-37; C07D209-86; C07D241-04; C07D295-08; G03G005-06

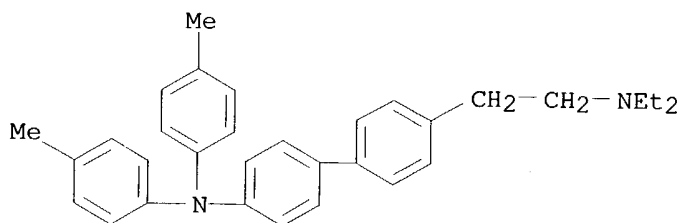
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25

ST aminobiphenyl charge transporter **electrophotog** photoconductor;

- methylphenyl phenylpiperazylethoxybiphenyl charge transporter
electrophotog photoconductor
- IT **Electrophotographic** photoconductors (photoreceptors)
 (aminobiphenyls as charge-transporting agents for **electrophotog**
 . photoconductors)
- IT **676125-29-4P 676125-30-7P**
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (aminobiphenyls as charge-transporting agents for **electrophotog**
 . photoconductors)
- IT 92-54-6, 1-Phenylpiperazine 109-89-7, Diethylamine, reactions
 167162-32-5 676125-31-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (aminobiphenyls as charge-transporting agents for **electrophotog**
 . photoconductors)
- IT **676125-29-4P 676125-30-7P**
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (aminobiphenyls as charge-transporting agents for **electrophotog**
 . photoconductors)
- RN 676125-29-4 HCAPLUS
- CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[3-(4-phenyl-1-piperazinyl)propoxy]- (9CI) (CA INDEX NAME)



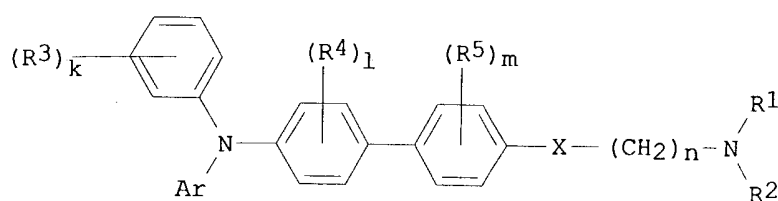
- RN 676125-30-7 HCAPLUS
- CN [1,1'-Biphenyl]-4-ethanamine, 4'-[bis(4-methylphenyl)amino]-N,N-diethyl- (9CI) (CA INDEX NAME)



- L22 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
- AN 2004:268733 HCAPLUS
- DN 140:311895
- TI **Electrophotographic** photoreceptors containing specific tertiary amine in light-sensitive layer for process cartridge of **electrophotographic** image -forming apparatus and method for image formation using the same
- IN Shimada, Tomoyuki; Ikegami, Takaaki; Suzuki, Yasuo; Tamoto, Nozomu; Kami,

Hidetoshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 50 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2004102080 | A2 | 20040402 | JP 2002-266005 | 20020911 |
| PRAI | JP 2002-266005 | | 20020911 | | |
| OS | MARPAT 140:311895 | | | | |
| GI | | | | | |

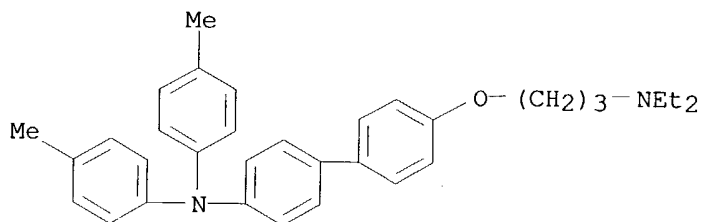


I

- AB The title **electrophotog.** photoreceptor has a light-sensitive layer on a support, wherein the light-sensitive layer contains tertiary amine I (R1-2 = alkyl, aromatic hydrocarbon ring; R3-5 = alkyl, alkoxy, halo; X = O, S; n = integer 2-4; k, l, m = integer 0-3). The photoreceptor shows the good durability and long service-life and provides high image quality.
- IC ICM G03G005-06
 ICS G03G005-07; G03G021-00
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **electrophotog** photoreceptor process cartridge image app
- IT **Electrophotographic** apparatus
Electrophotographic photoconductors (photoreceptors)
Electrophotography
 (electrophotog. photoreceptors for process cartridge of **electrophotog.** image -forming apparatus and method for image formation using the same)
- IT 676448-98-9 676448-99-0 676449-00-6
 676449-01-7 676449-02-8 676449-03-9
 676551-91-0 676551-92-1 676551-93-2
 676551-94-3 676551-95-4
- RL: TEM (Technical or engineered material use); USES (Uses)
 (tertiary amine in light-sensitive layer of **electrophotog.** photoreceptor)
- IT 676448-98-9 676448-99-0 676449-00-6
 676449-01-7 676449-02-8 676449-03-9
 676551-91-0 676551-92-1 676551-93-2
 676551-94-3 676551-95-4
- RL: TEM (Technical or engineered material use); USES (Uses)
 (tertiary amine in light-sensitive layer of **electrophotog.** photoreceptor)

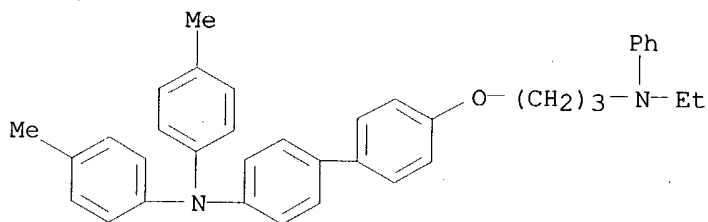
RN 676448-98-9 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[3-(diethylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



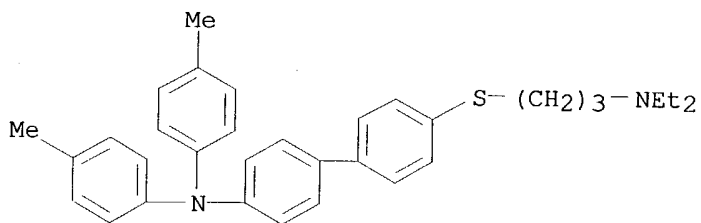
RN 676448-99-0 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[3-(ethylphenylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



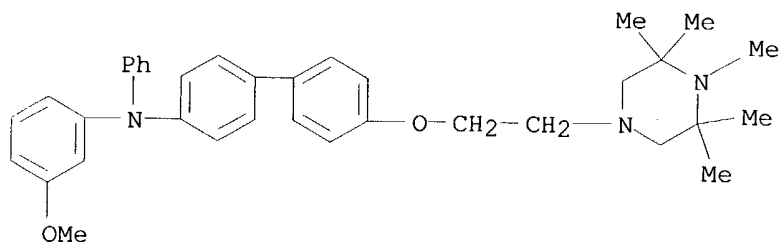
RN 676449-00-6 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[[3-(diethylamino)propyl]thio]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



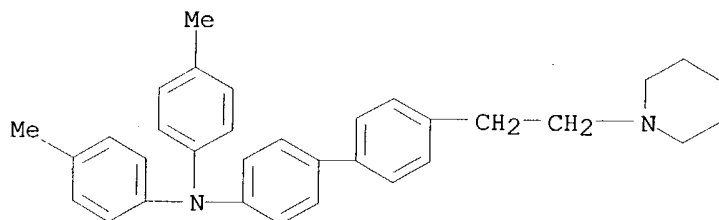
RN 676449-01-7 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(3-methoxyphenyl)-4'-[2-(3,3,4,5,5-pentamethyl-1-piperazinyl)ethoxy]-N-phenyl- (9CI) (CA INDEX NAME)



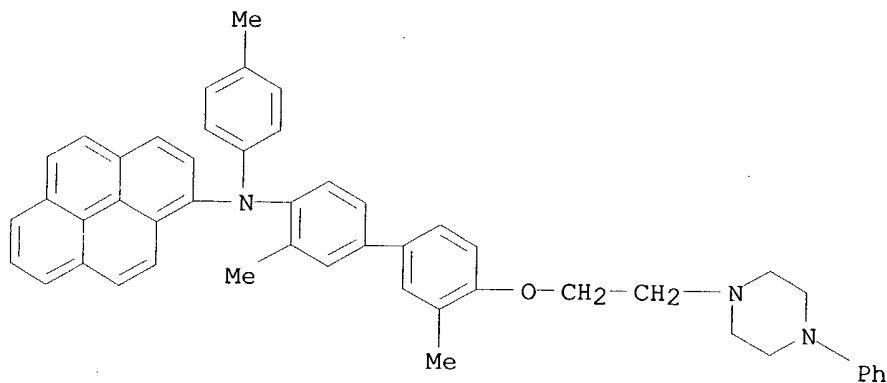
RN 676449-02-8 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[2-(1-piperidinylethyl)- (9CI) (CA INDEX NAME)]



RN 676449-03-9 HCAPLUS

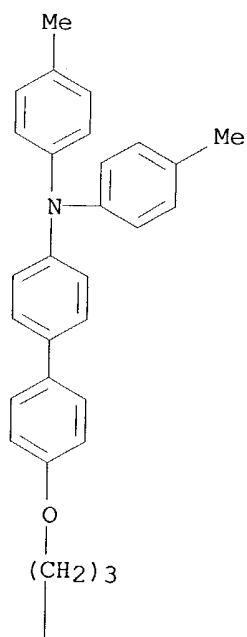
CN 1-Pyrenamine, N-[3,3'-dimethyl-4'-[2-(4-phenyl-1-piperazinyl)ethoxy][1,1'-biphenyl]-4-yl]-N-(4-methylphenyl)- (9CI) (CA INDEX NAME)]



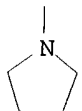
RN 676551-91-0 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[3-(1-pyrrolidinyl)propoxy]- (9CI) (CA INDEX NAME)]

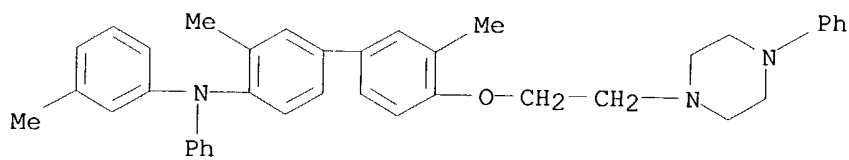
PAGE 1-A



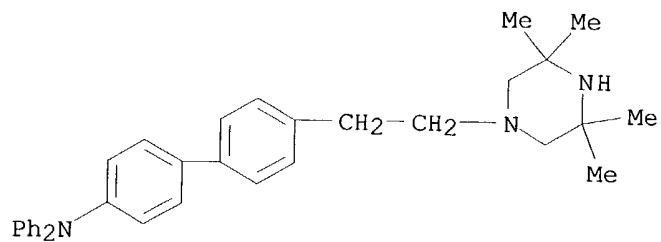
PAGE 2-A



RN 676551-92-1 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, 3,3'-dimethyl-N-(3-methylphenyl)-N-phenyl-4'-[2-(4-phenyl-1-piperazinyl)ethoxy]- (9CI) (CA INDEX NAME)

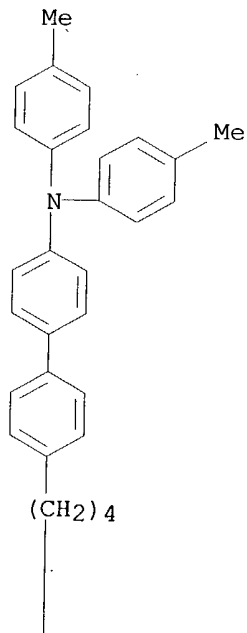


RN 676551-93-2 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, N,N-diphenyl-4'-[2-(3,3,5,5-tetramethyl-1-piperazinyl)ethyl]- (9CI) (CA INDEX NAME)

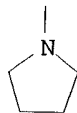


RN 676551-94-3 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[4-(1-pyrrolidinyl)butyl]- (9CI) (CA INDEX NAME)

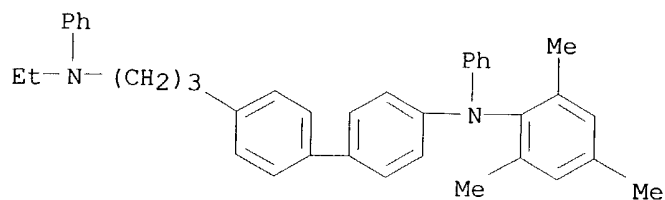
PAGE 1-A



PAGE 2-A



RN 676551-95-4 HCAPLUS
 CN [1,1'-Biphenyl]-4-propanamine, N-ethyl-N-phenyl-4'-[phenyl(2,4,6-trimethylphenyl)amino]- (9CI) (CA INDEX NAME)



L22 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:261079 HCAPLUS
 DN 140:311889
 TI Specific outermost surface layer **coating** solution for **electrophotographic** photoconductor and **electrophotographic** apparatus

IN Ikegami, Takaaki; Shimada, Tomoyuki; Suzuki, Yasuo; Tamoto, Nozomu; Kami, Hidetoshi

PA Ricoh Company, Japan

SO Eur. Pat. Appl., 57 pp.

CODEN: EPXXDW

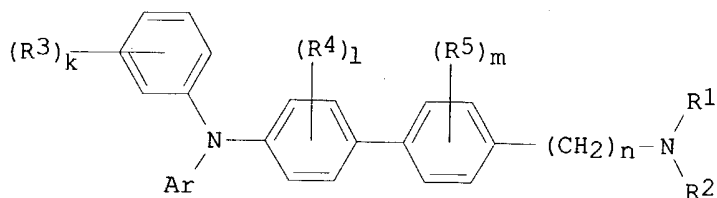
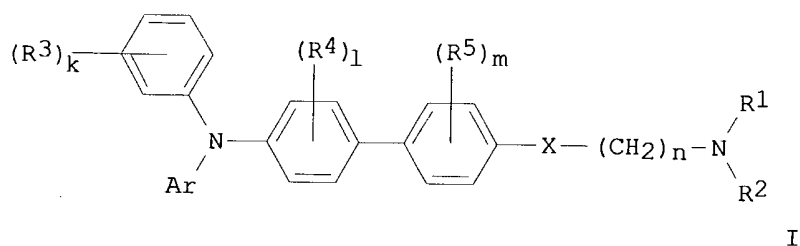
DT Patent

LA English

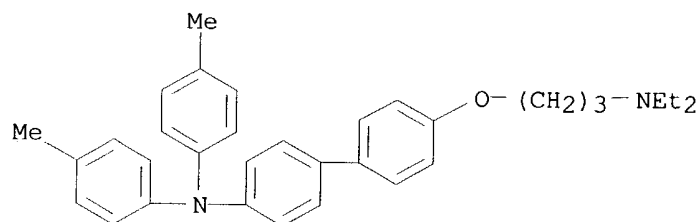
FAN.CNT 1

applicant

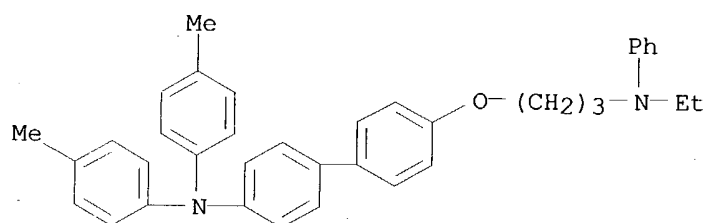
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 1403722 | A1 | 20040331 | EP 2003-21369 | 20030922 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | JP 2004102199 | A2 | 20040402 | JP 2002-276629 | 20020924 |
| | US 2004126687 | A1 | 20040701 | US 2003-667410 | 20030923 |
| PRAI | JP 2002-209997 | A | 20020718 | | |
| | JP 2002-276629 | A | 20020924 | | |
| OS | MARPAT 140:311889 | | | | |
| GI | | | | | |



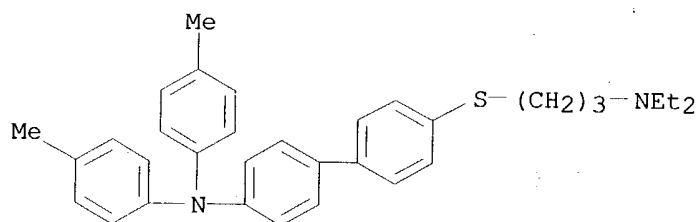
- AB The present invention relates to an **electrophotog.** photoconductor having at least a photosensitive layer on a conductive support, wherein the **electrophotog.** photoconductor comprising, in the outermost layer thereof: a filler, an organic compound having an acid value of 10-400 mgKOH/g, and at least one of compds. represented by general formulas I and II (R1,2 = alkyl groups or aromatic hydrocarbon rings, and may be identical or different, and may also be bonded together to form a substituted or unsubstituted heterocycle containing a nitrogen atom; R3-5 = alkyl or alkoxy groups, or halogen atoms; Ar = aromatic hydrocarbon ring or aromatic heterocycle.; n = 2-4; k, l, m are resp. integers in the range 0 to 3; X = oxygen atom, or a sulfur atom).
- IC ICM G03G005-147
ICS G03G005-06
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
- ST outermost surface layer **coating** soln **electrophotog** photoconductor app
- IT Polymers, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(carboxy-containing; specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)
- IT **Electrophotographic** apparatus
Electrophotographic photoconductors (photoreceptors)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor)
- IT Acrylic polymers, properties
Polyesters, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)
- IT 7631-86-9, Silica, uses 13463-67-7, Titanium oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(filler; specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)
- IT 27175-46-8, Acrylic acid-hydroxyethyl methacrylate copolymer 85884-66-8, Butyl acrylate-maleic acid-styrene copolymer
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)
- IT 676448-98-9 676448-99-0 676449-00-6
676449-01-7 676449-02-8 676449-03-9
RL: TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)
- IT 676448-98-9 676448-99-0 676449-00-6
676449-01-7 676449-02-8 676449-03-9
RL: TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)
- RN 676448-98-9 HCAPLUS
- CN [1,1'-Biphenyl]-4-amine, 4'-[3-(diethylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



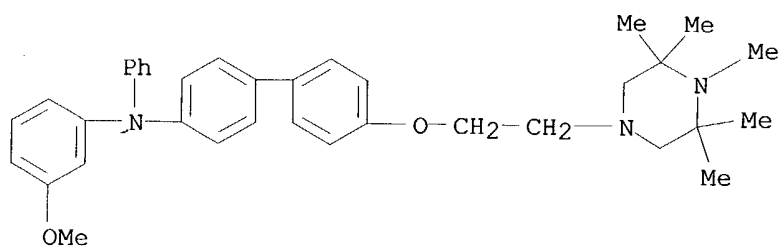
RN 676448-99-0 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, 4'-[3-(ethylphenylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 676449-00-6 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, 4'-[[3-(diethylamino)propyl]thio]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

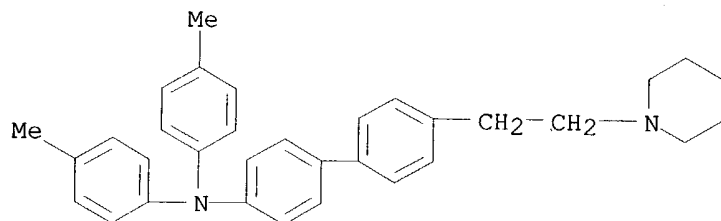


RN 676449-01-7 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, N-(3-methoxyphenyl)-4'-[2-(3,3,4,5,5-pentamethyl-1-piperazinyl)ethoxy]-N-phenyl- (9CI) (CA INDEX NAME)



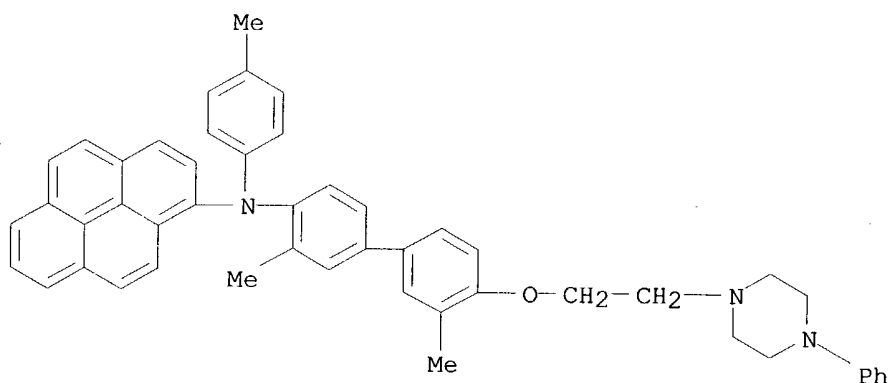
RN 676449-02-8 HCAPLUS
 CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[2-(1-

piperidinyl)ethyl]- (9CI) (CA INDEX NAME)



RN 676449-03-9 HCAPLUS

CN 1-Pyrenamine, N-[3,3'-dimethyl-4'-[2-(4-phenyl-1-piperazinyl)ethoxy][1,1'-biphenyl]-4-yl]-N-(4-methylphenyl)- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:440271 HCAPLUS

DN 133:65946

TI Laminated **electrophotographic** photoreceptor containing oxotitanium phthalocyanine and hydrazone derivative and its manufacturing method

IN Murakami, Yoshinobu; Onobori, Tsumugi; Aragae, Ryuichi

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|------------------|------|----------|-----------------|----------|
| PI | JP 2000181106 | A2 | 20000630 | JP 1998-351074 | 19981210 |
| PRAI | JP 1998-351074 | | 19981210 | | |
| OS | MARPAT 133:65946 | | | | |

AB In the photoreceptor comprising an elec. conducting support having thereon an vapor-deposited oxotitanium phthalocyanine charge-generating layer and a charge-transporting layer containing a hydrazone derivative Ar12N(p-C6H4)(p-C6H4)CH:NNAr2Ar3 (I; Ar1 = Ph, tolyl; Ar2 = Ph; Ar3 = Me, Ph; Ar2 and Ar3

may form a ring), the oxotitanium phthalocyanine is (A) treated with mixed vapor containing aromatic organic solvent and water, (B) treated with mixed vapor containing chlorinated aliphatic hydrocarbon and water, (C) soaked in ethylene glycol dialkyl ether and water, or (D) soaked in ethylene glycol alkyl ether acetate and water. In manufacture of the photoreceptor, the vapor deposited oxotitanium phthalocyanine is (a) treated with a mixed. vapor of an organic solvent and water or (b) soaked in a mixed solvent containing ethylene glycol derivative and water to change its crystal form and then a solution containing at least the hydrazone derivative I and a binder resin is coated thereon. The photoreceptor shows high sensitivity to semiconductor laser and improved stability and high sensitivity in repeated use.

IC ICM G03G005-06
ICS G03G005-06; G03G005-00; G03G005-047

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor oxotitanium phthalocyanine vapor deposition; solvent treatment oxotitanium phthalocyanine crystal **electrophotog**; hydrazone charge transporting agent **electrophotog**

IT **Electrophotographic** photoconductors (photoreceptors)
(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

IT 133878-89-4 133878-91-8 277325-32-3
RL: DEV (Device component use); USES (Uses)
(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

IT 26201-32-1P
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

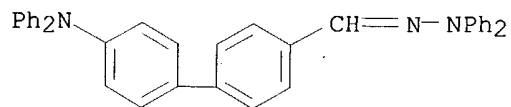
IT 67-66-3, uses 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 110-49-6, Ethylene glycol methyl ether acetate 110-71-4, Ethylene glycol dimethyl ether 111-15-9, Ethylene glycol ethyl ether acetate 629-14-1, Ethylene glycol diethyl ether 1300-21-6, Dichloroethane 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(oxotitanium phthalocyanine treated with mixed vapor or solvent)

IT 3468-11-9, 1,3-Diiminoisoindoline 5593-70-4, Tetrabutyl titanate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of oxotitanium phthalocyanine)

IT 133878-89-4 133878-91-8 277325-32-3
RL: DEV (Device component use); USES (Uses)
(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

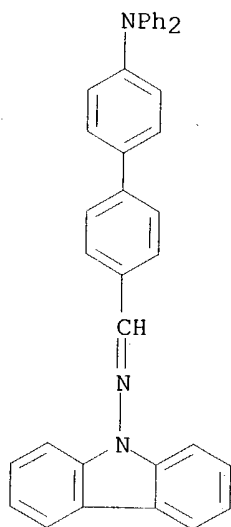
RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



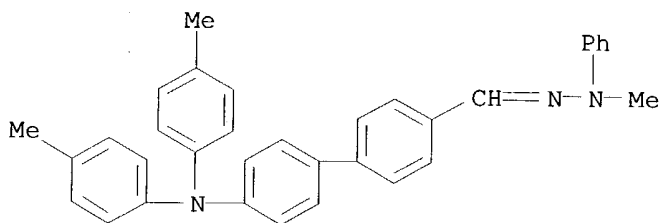
RN 133878-91-8 HCAPLUS

CN 9H-Carbazol-9-amine, N-[[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]methylene]-
(9CI) (CA INDEX NAME)



RN 277325-32-3 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-,
methylphenylhydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:641765 HCAPLUS

DN 121:241765

TI **Electrophotographic** photoreceptors with improved
photosensitivity and durability

IN Nakamori, Hideo; Tanaka, Masafumi; Fukami, Toshuki; Katsukawa, Masahito

PA Mita Industrial Co Ltd, Japan

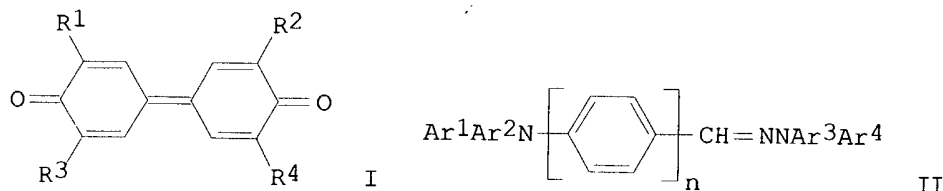
SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 06130696 | A2 | 19940513 | JP 1992-271238 | 19921009 |
| | JP 3121147 | B2 | 20001225 | | |
| PRAI | JP 1992-271238 | | 19921009 | | |
| GI | | | | | |



AB The photoreceptors comprise a conductive substrate with a **coating** of a photosensitive layer containing a diphenylquinone compound I [R1-4 = H, (substituted) alkyl, alkoxy, aryl, 2 of R1-4 are same group] as an electron-transporting agent and a hydrazone compound II [R5 = H, (substituted) alkyl, (substituted) alkoxy; Ar1-4 = H, (substituted) alkyl, alkoxy, aralkyl, aryl; n = 1, 2] as a pos. hole-transporting agent. The photoreceptors show high photosensitivity, good durability and low residual potential. Thus, an Al substrate was coated with a composition containing

x-type metal-free phthalocyanine, I (R1 = tert-Bu, R2 = R4 = CHMeEt, R3 = Ph), and II (Ar1=Ar2=Et, Ar3=Ar4=Ph) to give a monolayer photoreceptor.

IC ICM G03G005-06

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting agent; diphenylquinone deriv **electrophotog** photoreceptor; hydrazone compd **electrophotog** photoreceptor; pos hole transporting agent photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (containing diphenylquinone compound as electron-transporting agent and hydrazone compound as pos. hole-transporting agent)

IT 68189-23-1 71135-02-9 93754-54-2 **133878-89-4** 151718-08-0

152297-43-3 156543-87-2 158326-15-9 158326-16-0

RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(pos. hole-transporting agent, **electrophotog.** photoreceptor using)

IT 155306-04-0P 155306-05-1P 157488-03-4P

RL: DEV (Device component use); NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of, electron-transporting agent, **electrophotog.** photoreceptor using)

IT 2078-54-8, 2,6-Diisopropylphenol 2416-98-0, 2-tert-Butyl-6-phenylphenol 5510-99-6, 2,6-Di(sec-butylphenol) 152660-60-1, 2-($\alpha,\alpha,\gamma,\gamma$ -Tetramethylbutyl)-6-phenylphenol

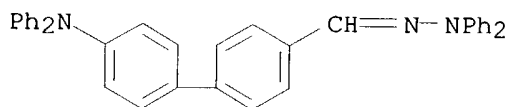
RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, diphenylquinone compound from)

IT **133878-89-4 152297-43-3 156543-87-2**

RL: DEV (Device component use); NUU (Other use, unclassified); TEM
(Technical or engineered material use); USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor
using)

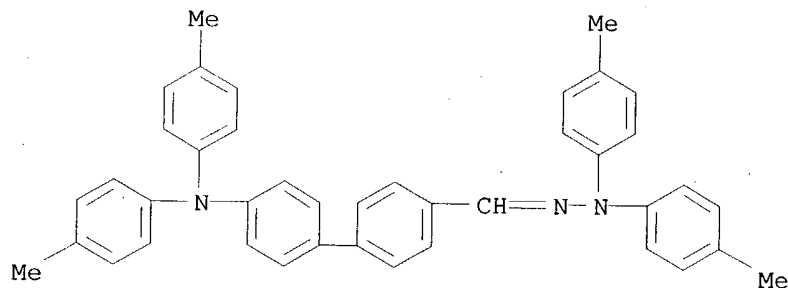
RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone
(9CI) (CA INDEX NAME)



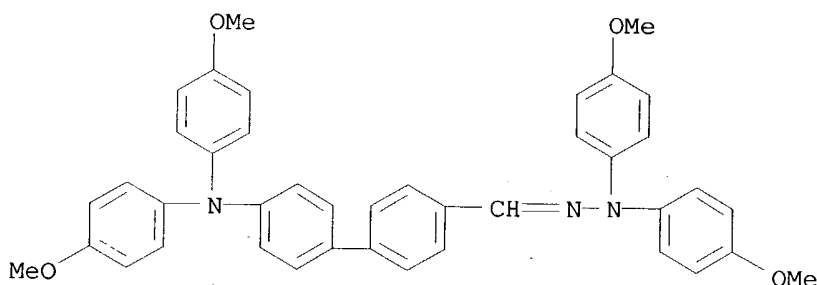
RN 152297-43-3 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-,
bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



RN 156543-87-2 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methoxyphenyl)amino]-,
bis(4-methoxyphenyl)hydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:545330 HCAPLUS

DN 121:145330

TI **Electrophotographic** photoreceptors with improved
photosensitivity and cyclicability

IN Fukami, Toshiki; Tanaka, Masafumi; Katsukawa, Masahito; Nakamori, Hideo

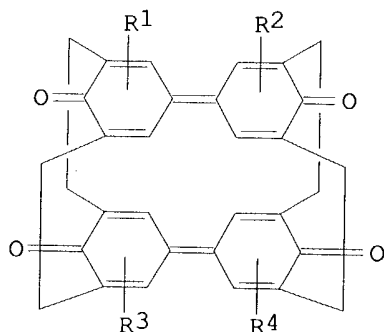
PA Mita Industrial Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.

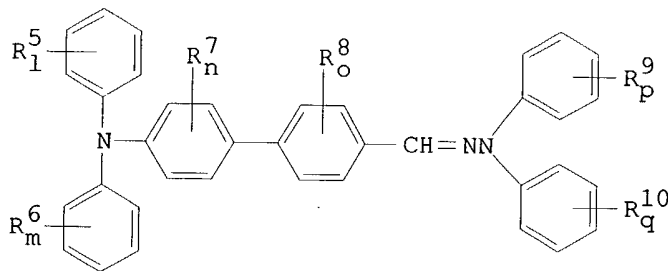
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 06075399 | A2 | 19940318 | JP 1992-229059 | 19920828 |
| PRAI | JP 1992-229059 | | 19920828 | | |
| GI | | | | | |



I



II

AB The photoreceptors comprise a conductive substrate with a **coating**
H, of a photosensitive layer containing a diphenoquinononophane compound I [R1-4 =

alkyl, alkoxy, (un)substituted aryl, benzyl] as an electron-transporting agent and, as a pos. hole-transporting agent, a hydrazone compound II [R5-10 = alkyl, alkoxy; l, m, p, q = 0-5; n, o = 0-4]. The photoreceptors show good photosensitivity, cyclicability, and lightfastness. Thus, an Al sheet was coated with a composition containing metal-free phthalocyanine, I

(R1-4 =

H), and II (R5-10 = H) to give a monolayer photoreceptor.

IC ICM G03G005-06

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting agent; hole transporting agent **electrophotog** photoreceptor; diphenoquinonophane compd **electrophotog** photoreceptor; hydrazone compd **electrophotog** photoreceptor; triphenylamine deriv **electrophotog** photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (diphenoquinonophane compds. as electron-transporting agents and hydrazone compds. as hole-transporting agents for)

IT 133878-89-4 152297-43-3 156543-87-2

RL: USES (Uses)

(**electrophotog.** photoreceptors containing diphenoquinonophane compds. as electron-transporting agent and, as hole-transporting agent)

IT 136613-03-1 155107-25-8 156242-22-7

RL: USES (Uses)

(**electrophotog.** photoreceptors containing hydrazone compds. as hole-transporting agent and, as electron-transporting agent)

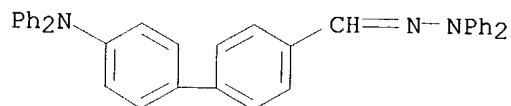
IT 133878-89-4 152297-43-3 156543-87-2

RL: USES (Uses)

(**electrophotog.** photoreceptors containing diphenoquinonophane compds. as electron-transporting agent and, as hole-transporting agent)

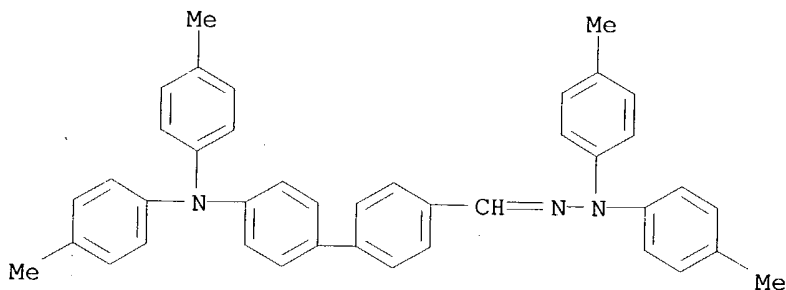
RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



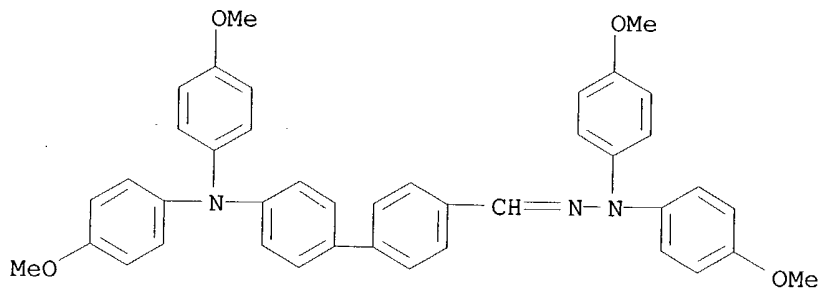
RN 152297-43-3 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-, bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



RN 156543-87-2 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methoxyphenyl)amino]-, bis(4-methoxyphenyl)hydrazone (9CI) (CA INDEX NAME)

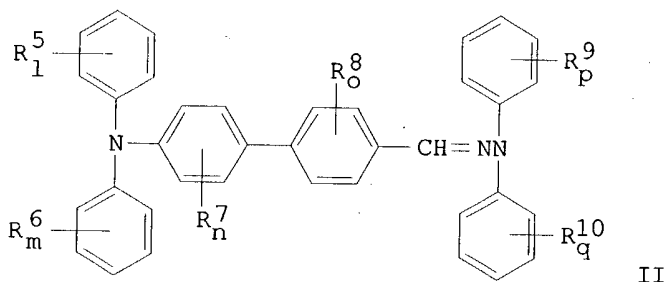
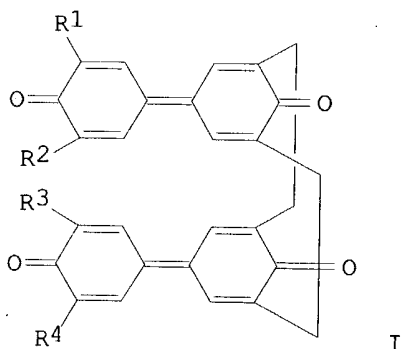


L22 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:495991 HCAPLUS

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

DN 121:95991
 TI **Electrophotographic** photoreceptors containing diphenoquinophene compound and triphenyl amine derivative
 IN Fukami, Toshiki; Tanaka, Masafumi; Katsukawa, Masahito; Nakamori, Hideo
 PA Mita Industrial Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 06059478 | A2 | 19940304 | JP 1992-210206 | 19920806 |
| PRAI | JP 1992-210206 | | 19920806 | | |
| GI | | | | | |



AB The photoreceptors comprise a conductive substrate with a **coating** of a photosensitive layer containing a diphenoquinophene compound I [R1-4 = H, alkyl, alkoxy, (substituted) aryl, benzyl] as an electron-transporting material and II [R5-10 = alkyl, alkoxy; l, m, p, q = 0-5; n, o = 0-4] as a pos. hole-transporting material. The photoreceptors show good photosensitivity, durability, and lightfastness. Thus, an Al sheet was coated with a composition containing metal-free phthalocyanine, I (R1-4 = H), and II (R5-10 = H) to give a single layer-type photoreceptor.

IC ICM G03G005-06
 ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting agent; pos
hole transporting agent photoreceptor; diphenylquinophene compd
electrophotog photoreceptor; triphenylamine deriv
electrophotog photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors
(containing diphenylquinophene compound and triphenylamine derivative)

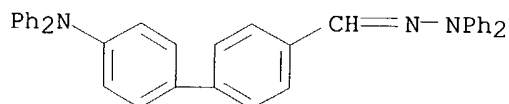
IT 136613-02-0 155107-24-7 156242-20-5
RL: USES (Uses)
(electron-transporting agent, **electrophotog.** photoreceptor
using)

IT 133878-89-4 152297-43-3 156543-87-2
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor
using)

IT 133878-89-4 152297-43-3 156543-87-2
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor
using)

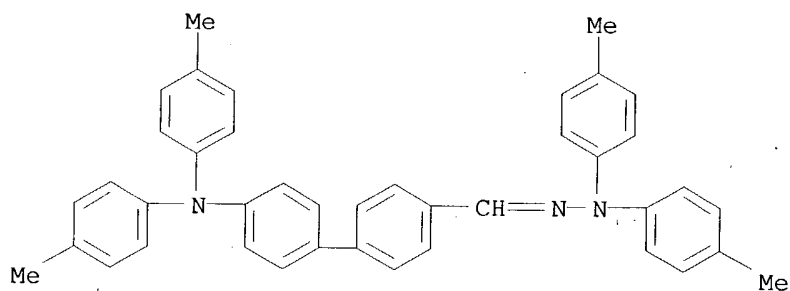
RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone
(9CI) (CA INDEX NAME)



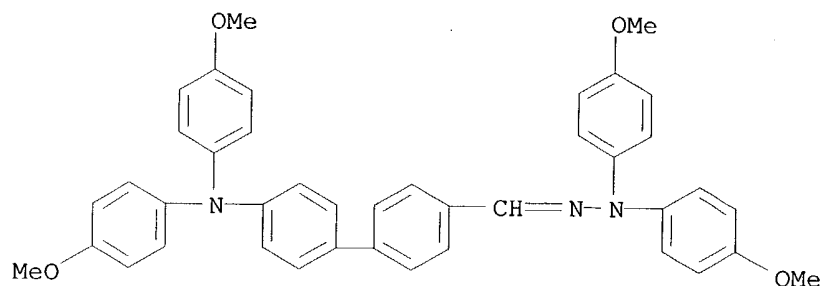
RN 152297-43-3 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-,
bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



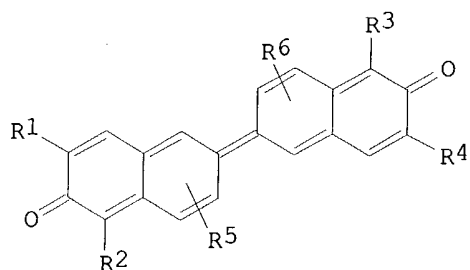
RN 156543-87-2 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methoxyphenyl)amino]-,
bis(4-methoxyphenyl)hydrazone (9CI) (CA INDEX NAME)

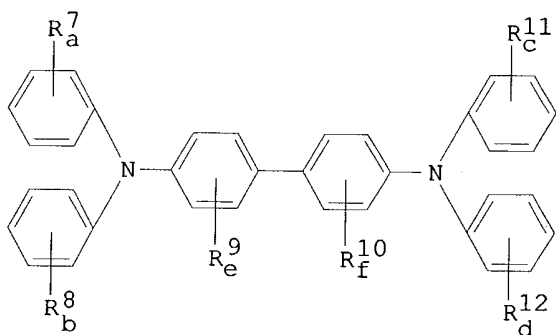


L22 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:334916 HCAPLUS
 DN 120:334916
 TI **Electrophotographic** photoreceptor using dinaphthoquinone
 derivative electron-transporting agent
 IN Fukami, Toshiki; Katsukawa, Masahito
 PA Mita Industrial Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 18 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 05341545 | A2 | 19931224 | JP 1992-147691 | 19920608 |
| PRAI | JP 1992-147691 | | 19920608 | | |
| OS | MARPAT 120:334916 | | | | |
| GI | | | | | |



I



II

AB The photoreceptor comprises a conductive substrate coated with a photosensitive layer containing a dinaphthoquinone derivative I (R1-6 = H, alkyl,

aryl, alkoxy, aralkyl) as an electron-transporting agent. The photosensitive layer may contain a diamine compound II (R7-12 = alkyl, alkoxy, halo, aryl, nitro, cyano, alkylamino; e, f = 0-3; a, b, c, d = 0-2) as a hole-transporting agent. The photoreceptor shows high photoresponse and good cyclic ability.

IC ICM G03G005-06

ICS G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting naphthoquinone; amine hole transport **electrophotog** photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (containing dinaphthoquinone electron-transporting agent)

IT 155171-89-4 155171-90-7 155171-91-8

RL: USES (Uses)

(**electrophotog.** photoreceptor electron-transporting agent)

IT 83890-46-4 84746-59-8 89114-90-9 95709-85-6 95905-90-1
96492-42-1 103079-11-4 105465-13-2 116942-09-7 122738-25-4
124591-08-8 127697-06-7 132761-17-2 **133878-89-4**
147845-86-1 151028-59-0 155171-92-9

RL: USES (Uses)

(**electrophotog.** photoreceptor hole-transporting agent)

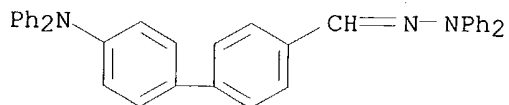
IT **133878-89-4**

RL: USES (Uses)

(**electrophotog.** photoreceptor hole-transporting agent)

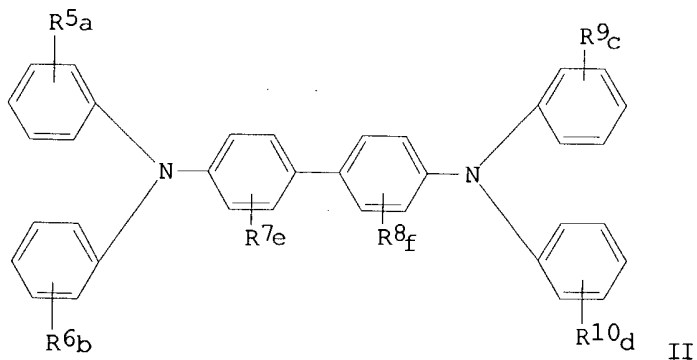
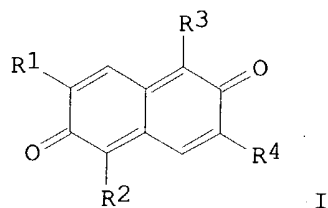
RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:334915 HCAPLUS
 DN 120:334915
 TI **Electrophotographic** photoreceptor using naphthoquinone
 derivative electron-transporting agent
 IN Fukami, Toshuki; Tanaka, Masafumi
 PA Mita Industrial Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 18 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 05341544 | A2 | 19931224 | JP 1992-147690 | 19920608 |
| PRAI | JP 1992-147690 | | 19920608 | | |
| OS | MARPAT 120:334915 | | | | |
| GI | | | | | |



AB The photoreceptor comprises a conductive substrate coated with a photosensitive layer containing a naphthoquinone derivative I (R1-4 = H, alkyl, aryl, alkoxy, aralkyl) as an electron-transporting agent. The photosensitive layer may contain a diamine compound II (R6-10 = alkyl, alkoxy, halo, aryl, nitro, cyano, alkylamino; e, f = 0-3; a, b, c, d =

0-2) as a hole-transporting agent. The photoreceptor shows high photoresponse and good cyclic stability.

IC ICM G03G005-06
ICS G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting naphthoquinone; diamine hole transport **electrophotog** photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (containing naphthoquinone electron-transporting agent)

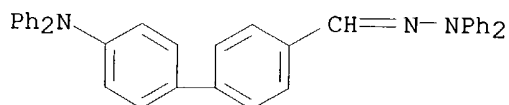
IT 155171-89-4 155171-90-7 155171-91-8
RL: USES (Uses)
(**electrophotog**. photoreceptor electron-transporting agent)

IT 83890-46-4 84746-59-8 89114-90-9 95709-85-6 95905-90-1
96492-42-1 103079-11-4 105465-13-2 116942-09-7 122738-25-4
124591-08-8 127697-06-7 132761-17-2 **133878-89-4**
147845-86-1 151028-59-0 155171-92-9
RL: USES (Uses)
(**electrophotog**. photoreceptor hole-transporting agent)

IT **133878-89-4**
RL: USES (Uses)
(**electrophotog**. photoreceptor hole-transporting agent)

RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:90776 HCAPLUS

DN 120:90776

TI **Electrophotographic** photoreceptors with improved photosensitivity and durability

IN Fukami, Toshuki; Tanaka, Masafumi; Hanatani, Yasuyuki

PA Mita Industrial Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

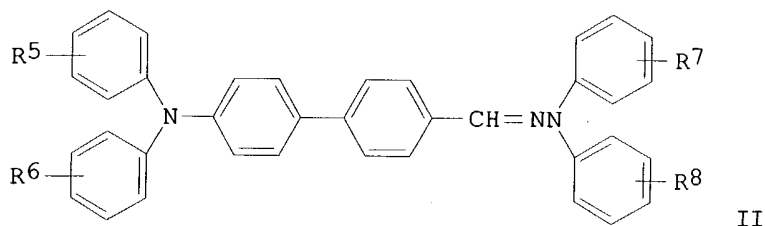
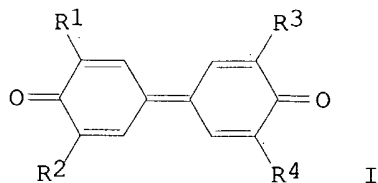
CODEN: JKXXAF

DT Patent

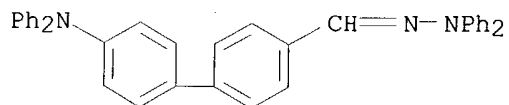
LA Japanese

FAN.CNT 1

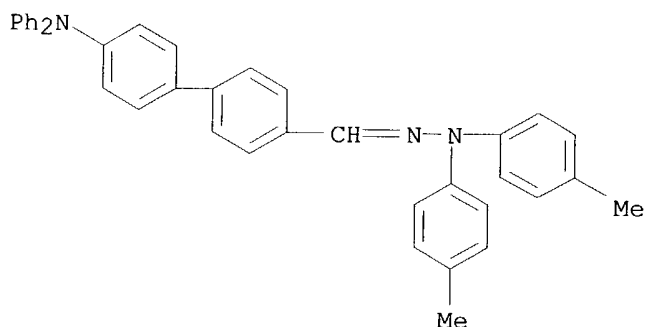
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 05150486 | A2 | 19930618 | JP 1991-316604 | 19911129 |
| PRAI | JP 1991-316604 | | 19911129 | | |
| GI | | | | | |



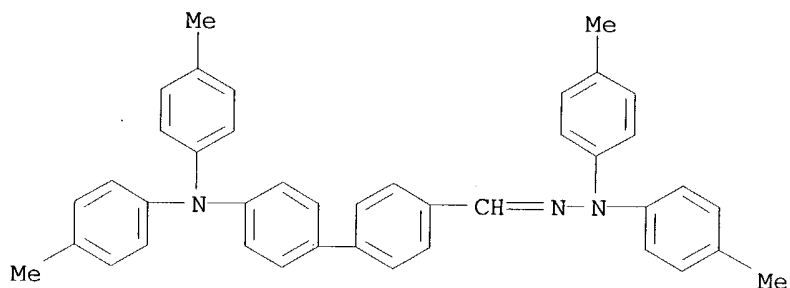
- AB The photoreceptors comprise a conductive substrate with a **coating** of an organic photosensitive layer containing a charge-generating agent, an electron-transporting agent I (R1-4 = H, alkyl, aryl, alkoxy, benzyl), and a pos. hole-transporting agent II (R5-8 = H, (substituted) lower alkyl or alkoxy). The photoreceptors show good photosensitivity, durability, lightfastness, and ozone resistance. Thus, an Al substrate was coated with a composition containing metal-free phthalocyanine, I (R1, R3 = Ph; R2 =
- R4 = tert-Bu), and II (R5-8 = H) to give a photoreceptor.
- IC ICM G03G005-06
ICS G03G005-06
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **electrophotog** diphenylquinone electron transporting agent; pos hole transporting agent photoreceptor; hydrazone triphenylamine
- IT **electrophotog** photoreceptor
- IT **Electrophotographic** photoconductors and photoreceptors (containing diphenylquinone electron-transporting agents and pos. hole-transporting agents)
- IT 2416-99-1 126657-30-5 151028-57-8
RL: USES (Uses)
(electron-transporting agent, **electrophotog.** photoreceptor using)
- IT **133878-89-4 152297-42-2 152297-43-3**
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)
- IT **133878-89-4 152297-42-2 152297-43-3**
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)
- RN 133878-89-4 HCAPLUS
- CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



RN 152297-42-2 HCAPLUS
 CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-,
 bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



RN 152297-43-3 HCAPLUS
 CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-,
 bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)

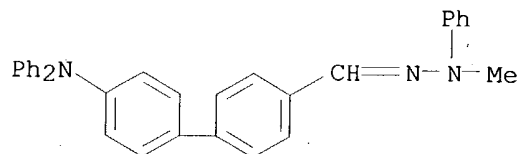


L22 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1991:237619 HCAPLUS
 DN 114:237619
 TI **Electrophotographic** photoconductors
 IN Kobayashi, Toru; Hagiwara, Toshimitsu
 PA Takasago Perfumery Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|-------------|------|----------|-----------------|----------|
| PI | JP 02272571 | A2 | 19901107 | JP 1989-94497 | 19890414 |
| | JP 2528710 | B2 | 19960828 | | |

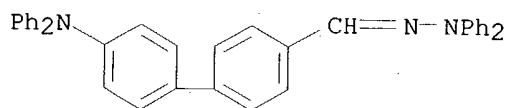
PRAI JP 1989-94497 19890414
 OS MARPAT 114:237619
 GI For diagram(s), see printed CA Issue.
 AB Photoconductors contain charge carrier-transporting agents I or II (R1-2 = lower alkyl, benzyl, Ph, or may jointly form an N-containing heterocyclic group). These photoconductors have high sensitivity and stable chargeability, and are highly flexible. Thus, an Al-coated polyester film was coated with Ti phthalocyanine by vacuum deposition, and with a polycarbonate-III charge-transporting layer to obtain a photoconductor. This photoconductor was charged to -1138 V, and showed residual voltage 48 V and sensitivity (exposure required for half decay of voltage) 1.0 lx-s.
 IC ICM G03G005-06
 ICS C09B026-02
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST **electrophotog** photoconductor charge transporting agent
 IT Hydrazones
 RL: USES (Uses)
 (as **electrophotog.** charge-transporting agents)
 IT **Electrophotographic** photoconductors
 (charge-transporting agents for, hydrazones as)
 IT 122011-48-7 122011-51-2 128859-87-0 **133878-88-3**
133878-89-4 133878-90-7 133878-91-8
 133897-13-9
 RL: USES (Uses)
 (charge-transporting agent, **electrophotog.** photoconductors containing)
 IT 2920-38-9, 4-Cyanobiphenyl
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (iodination of, electrog. charge-transporting agents from)
 IT 133878-93-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and hydrazone formation of, electrog. charge-transporting agents from)
 IT 57774-34-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with diphenylamine, electrog. charge-transporting agents from)
 IT **133878-92-9P**
 RL: PREP (Preparation)
 (preparation and reduction and hydrolysis of, electrog. charge-transporting agents from)
 IT 530-50-7, 1,1-Diphenylhydrazine 614-31-3, 1-Benzyl-1-phenylhydrazine
 618-40-6 18992-86-4, 1-Aminocarbazole 133878-94-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, hydrazone as **electrophotog.** charge-transporting agent from)
 IT 122-39-4, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with iodobiphenyl derivative, electrog. charge-transporting agents from)
 IT **133878-88-3 133878-89-4 133878-90-7**
133878-91-8
 RL: USES (Uses)
 (charge-transporting agent, **electrophotog.** photoconductors containing)
 RN 133878-88-3 HCAPLUS
 CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-,

methylphenylhydrazone (9CI) (CA INDEX NAME)



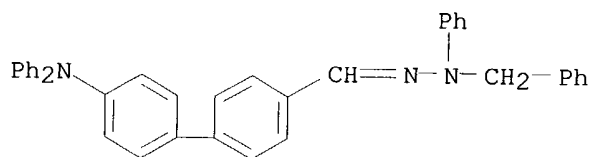
RN 133878-89-4 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



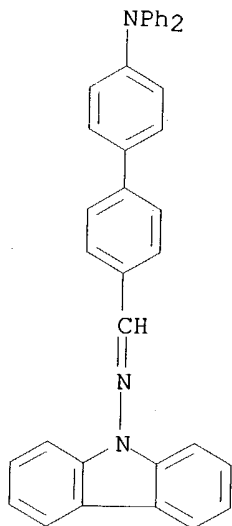
RN 133878-90-7 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, phenyl(phenylmethyl)hydrazone (9CI) (CA INDEX NAME)

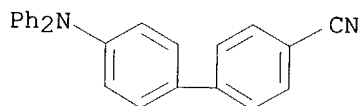


RN 133878-91-8 HCAPLUS

CN 9H-Carbazol-9-amine, N-[[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]methylene]- (9CI) (CA INDEX NAME)

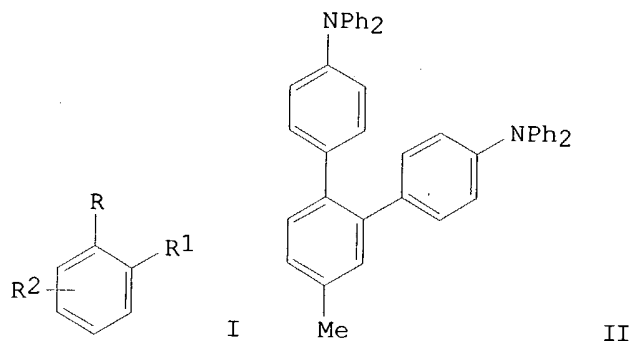


IT 133878-92-9P
 RL: PREP (Preparation)
 (preparation and reduction and hydrolysis of, electrog. charge-transporting agents from)
 RN 133878-92-9 HCAPLUS
 CN [1,1'-Biphenyl]-4-carbonitrile, 4'-(diphenylamino)- (9CI) (CA INDEX NAME)



L22 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1991:14906 HCAPLUS
 DN 114:14906
 TI **Electrophotographic** photoreceptors using terphenyl derivative as charge-transporting agent
 IN Kanamaru, Tetsuro; Kikuchi, Norihiro; Suzuki, Koichi; Matsumoto, Masakazu
 PA Canon K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 02134642 | A2 | 19900523 | JP 1988-286862 | 19881115 |
| PRAI | JP 1988-286862 | | 19881115 | | |
| GI | | | | | |



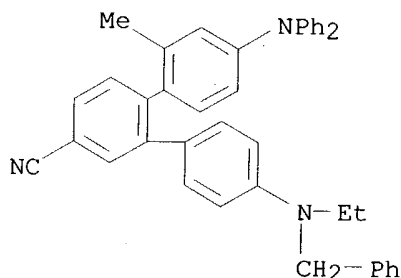
- AB The title photoreceptors comprise a conductive support with a **coating** of a photosensitive layer containing a o-terphenyl derivative I [R, R1 = (substituted) aryl, heterocycle, ≥1 of them have NR3R4 [R3, R4 = H, (substituted) alkyl, aryl, aralkyl, heterocycle, R3 and R4 may form a 5- to 7-membered ring]; R2 = H, alkyl, alkoxy, halo, CN, NO2, acyl, CF3]. A photoreceptor using a bisazo pigment and II showed good photosensitivity and durability.
- IC ICM G03G005-06
ICS C07D209-86; C07D213-74; C07D223-22; C09K009-02; G03G005-06
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25
- ST **electrophotog** photoreceptor charge transporting agent; terphenyl deriv **electrophotog** photoreceptor
- IT **Electrophotographic** photoconductors
(using terphenyl derivative as charge-transporting agent)
- IT 14039-00-0, 4-(4-Dimethylaminophenyl)-2,6-diphenylthiapyrylium perchlorate
107047-66-5 111919-13-2 124329-68-6 129582-84-9
RL: USES (Uses)
(charge-generating agent, **electrophotog**. photoreceptor using terphenyl derivative as charge-transporting agent and)
- IT 130951-80-3 130951-81-4 130951-82-5 130951-83-6 130951-84-7
130951-85-8 130951-86-9 130951-87-0 130951-88-1 130951-89-2
130951-90-5 130951-91-6 130951-92-7 130951-93-8
130951-94-9 130951-95-0 130951-96-1 130972-56-4
RL: USES (Uses)
(charge-transporting agent, **electrophotog**. photoreceptor using)
- IT 84-15-1, o-Terphenyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(nitration and reduction of)
- IT 130951-97-2P, [1,1':2',1''-Terphenyl]-4,4''-diamine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of)
- IT 130951-79-0P
RL: PREP (Preparation)
(preparation of, charge-transporting agent, **electrophotog**. photoreceptor using)
- IT 74-88-4, Methyl iodide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of)
- IT **130951-90-5**

RL: USES (Uses)

(charge-transporting agent, **electrophotog.** photoreceptor using)

RN 130951-90-5 HCAPLUS

CN [1,1':2',1''-Terphenyl]-4'-carbonitrile, 4-(diphenylamino)-4''-[ethyl(phenylmethyl)amino]-2-methyl- (9CI) (CA INDEX NAME)



L22 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1990:66714 HCAPLUS

DN 112:66714

TI Improved **electrophotographic** photoreceptor containing organic sulfide

IN Matsumoto, Masakazu; Ishikawa, Shozo; Ando, Wataru; Kikuchi, Toshihiro; Yamazaki, Itaru

PA Canon K. K., Japan

SO Fr. Demande, 109 pp.

CODEN: FRXXBL

DT Patent

LA French

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | FR 2623638 | A1 | 19890526 | FR 1988-15260 | 19881123 |
| | FR 2623638 | B1 | 19940408 | | |
| | JP 01136161 | A2 | 19890529 | JP 1987-296447 | 19871124 |
| | JP 05049227 | B4 | 19930723 | | |
| | JP 01136160 | A2 | 19890529 | JP 1987-296446 | 19871124 |
| | JP 01136159 | A2 | 19890529 | JP 1987-296444 | 19871124 |
| | JP 01136158 | A2 | 19890529 | JP 1987-296443 | 19871124 |
| | JP 01140162 | A2 | 19890601 | JP 1987-299045 | 19871126 |
| | JP 05002983 | B4 | 19930113 | | |
| | US 4931371 | A | 19900605 | US 1988-274503 | 19881121 |
| PRAI | JP 1987-296443 | | 19871124 | | |
| | JP 1987-296444 | | 19871124 | | |
| | JP 1987-296446 | | 19871124 | | |
| | JP 1987-296447 | | 19871124 | | |
| | JP 1987-299045 | | 19871126 | | |

AB An **electrophotog.** photoconductor is described with a support and a photosensitive layer containing a compound having an aminoaryl group of the formula R1R2NAr1 [R1, R2 = alkyl, aryl, aralkyl, or a group for forming a 5- or 6-membered ring; Ar1 = arylene], and a group of the formula SR3 [R3 = alkyl, aralkyl], SSR4 [R4 = alkyl, aryl, aralkyl], SR5 [R5 = aryl] and SR6 [R6 = R4], or a cyclic sulfide containing ≥ 2 S atoms; or a thioether of the formula R1R2NAr2(CH:CH)nCH:C(X)Y [Ar2 = arylene, a divalent heterocyclic group; n = 0 or 1; X = SR7 or SOR8; Y = SR9, alkyl,

aralkyl, aryl (R7-R9 = R4); X and Y together may form a thioether group].
The photoconductor has improved elec. properties. Thus,
(MeS-p-C6H4)2NC6H4-p-SMe was used in the charge transport layer of a
multilayer **electrophotog.** photoconductor.

IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 25

ST **electrophotog** photoconductor sulfide charge transport; aminoaryl
sulfide charge transport; thioether charge transport

IT Disulfides

Sulfides, uses and miscellaneous

RL: USES (Uses)

(as charge-transport agent in photoconductors)

IT **Electrophotographic** photoconductors

Electrophotographic plates

(containing aminoaryl sulfide or thioether)

IT Sulfides, uses and miscellaneous

RL: USES (Uses)

(aminoaryl, as charge-transport agent in photoconductors)

| | | | | | |
|----|-------------|-------------|--------------------|-------------|-------------|
| IT | 114315-13-8 | 124905-40-4 | 124905-41-5 | 124905-42-6 | 124905-43-7 |
| | 124905-44-8 | 124905-45-9 | 124905-46-0 | 124905-47-1 | 124905-48-2 |
| | 124905-49-3 | 124905-50-6 | 124905-51-7 | 124905-52-8 | 124905-53-9 |
| | 124905-54-0 | 124905-55-1 | 124905-56-2 | 124905-57-3 | 124905-58-4 |
| | 124905-59-5 | 124905-60-8 | 124905-61-9 | 124905-62-0 | 124905-63-1 |
| | 124905-64-2 | 124905-65-3 | 124905-66-4 | 124905-67-5 | 124905-68-6 |
| | 124905-69-7 | 124905-70-0 | 124905-71-1 | 124905-72-2 | 124905-73-3 |
| | 124905-74-4 | 124905-75-5 | 124905-76-6 | 124905-77-7 | 124905-78-8 |
| | 124905-79-9 | 124905-80-2 | 124905-81-3 | 124905-82-4 | 124905-83-5 |
| | 124905-84-6 | 124905-85-7 | 124905-86-8 | 124905-87-9 | 124905-88-0 |
| | 124905-89-1 | 124905-90-4 | 124905-91-5 | 124905-92-6 | 124905-93-7 |
| | 124905-94-8 | 124905-95-9 | 124905-96-0 | 124905-97-1 | 124905-98-2 |
| | 124905-99-3 | 124906-00-9 | 124906-01-0 | 124906-02-1 | 124906-03-2 |
| | 124906-04-3 | 124906-05-4 | 124906-06-5 | 124906-07-6 | 124906-08-7 |
| | 124906-09-8 | 124906-10-1 | 124906-11-2 | 124906-12-3 | 124906-13-4 |
| | 124906-14-5 | 124906-15-6 | 124906-16-7 | 124906-17-8 | |
| | 124906-18-9 | 124906-19-0 | 124906-20-3 | 124906-21-4 | 124906-22-5 |
| | 124906-23-6 | 124906-24-7 | 124906-25-8 | 124906-26-9 | 124906-27-0 |
| | 124906-28-1 | 124906-29-2 | 124906-30-5 | 124906-31-6 | 124906-32-7 |
| | 124906-33-8 | 124926-43-8 | 124926-44-9 | 124926-45-0 | 124926-46-1 |
| | 124926-47-2 | 124926-48-3 | 124926-49-4 | 124926-50-7 | 124926-51-8 |

RL: USES (Uses)

(**electrophotog.** photoconductor containing)

IT 124906-34-9P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and use of, in **electrophotog.** photoconductor)

IT 121-45-9 1748-15-8, 1,3-Dithiane-2-thione 4181-05-9,
p-Diphenylaminobenzaldehyde

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactions of, organic sulfide from)

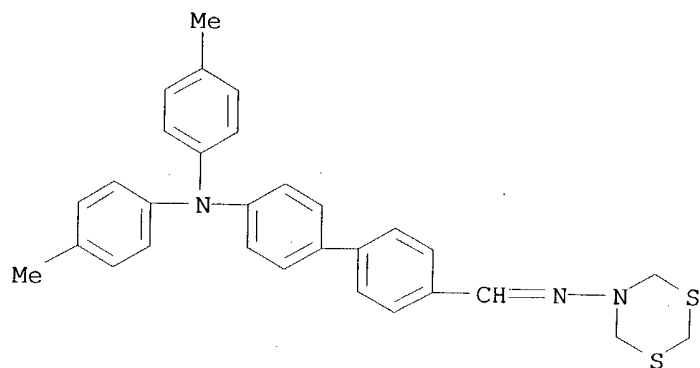
IT **124906-16-7**

RL: USES (Uses)

(**electrophotog.** photoconductor containing)

RN 124906-16-7 HCAPLUS

CN 4H-1,3,5-Dithiazin-5(6H)-amine, N-[[4'-[bis(4-methylphenyl)amino][1,1'-
biphenyl]-4-yl]methylene]- (9CI) (CA INDEX NAME)



=>